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Running Head: PSYCHOPATHIC TRAITS, ATTACHMENT

Attachment and Parental Relationships and the Association with Psychopathic Traits  
in Young Adults.

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### Abstract

Recent research indicates an increase in the prevalence of psychopathic traits in the general population. Debate surrounding the influences of insecure maternal and paternal attachment relationships and their associations with psychopathic traits has been increasing; whereas focus on insecure maternal attachment was more prevalent, insecure paternal attachment has not been researched as much despite their similar impact. This study aimed to investigate the associations between the constructs of parent adult-child relationships and their associations with primary and secondary psychopathic traits in a non-clinical population of 211 young adults, ranging between 18-40 years of age. The role of attachment was assessed using the Relationship Scale Questionnaire and the Parent Adult-Child Relationship Questionnaire. The Levenson Self-Report Psychopathy Scale was used to assess psychopathic traits. Findings indicated that individuals with dismissive and fearful attachments had higher scores of both primary and secondary psychopathic traits in contrast to secure attached individuals who scored low on these traits. Substantively, a relationship with fathers characterised by increased responsibility and control predicted higher scores on the primary and secondary psychopathic traits. Findings emphasise the significant overlap between both dismissive and fearful attachment and the prediction of psychopathic traits. Substantially relationships with fathers are stressed.

Keywords: *primary and secondary psychopathic traits; maternal attachment; parental attachment; paternal attachment; young adults*

## 1. Introduction

### 1.1. Psychopathic traits

There has been a burgeon body of research on psychopathic traits in non-clinical populations (i.e., Carter *et al.*, 2014; Craig *et al.*, 2013; Mack *et al.*, 2011; Outcalt *et al.*, 2007). The emerging research has revealed the prevalence of psychopathic traits in the general population and demonstrated latent structure as well as similar correlates of serious behavioural patterns (i.e., delinquency, violence, and distressfully affectionless acts) to forensic/offender samples (Carter *et al.*, 2014). Researchers identified that psychopathic traits among adults are associated with lack of emotional sensitivity and social relatedness (Patrick, Bradley & Lang, 1993). Psychopathic traits are explained by a cluster of behavioural and personality traits (Mack, Hackney, & Pyle, 2011), in which issues in understanding others and relating to their emotions are one of the primary characteristics (Muñoz, Kerr, & Besic, 2008). Nevertheless, the literature that focuses on the assessment of the heterogeneity of distinct developmental pathways to primary and secondary psychopathic traits in non-incarcerated populations is sparse (Pasalich *et al.*, 2012). Also, limited research explains the association of primary and secondary psychopathic traits with theoretical assertions that may inform our understanding of the deficits in the ability to form close interpersonal attachments during adulthood (Pasma, 2008). Substantially, the impact of parent adult-child relationships on adult psychopathic traits has not been explored extensively (Peisah *et al.*, 1999).

Although several concerns are associated with the uncertainty that exists in literature surrounding the assessment of psychopathic traits (Patrick *et al.*, 1993); Karpman (1948) and Cleckley (1995) identified abnormal or deficient emotional responding as the key measure for psychopathic traits (Dean *et al.*, 2013; Patrick *et al.*, 1993). According to Karpman (1948), primary

psychopathic traits are strongly linked to lack of empathy and fear (Dean *et al.*, 2013). In contrast, secondary psychopathic traits share many features of primary psychopathic traits, but unlike primary psychopathic traits, individuals with secondary psychopathic traits are remorseful and fearful (Dean *et al.*, 2013). To elucidate, primary psychopathic traits are defined as constitutional deficits leading to poor affective experience, deceitful interpersonal style, and impulsive and irresponsible behavioural style, whereas secondary psychopathic traits are seen to be developed from environmental stimuli associated with similar changes in contextual, behavioural and individual problems (Del Gaizo & Falkenbach, 2008). Hence, primary psychopathic traits are characterised by fearlessness, impulsivity, high social dominance, high self-esteem, and low anxiety; whereas secondary psychopathic traits are linked with exposure to trauma and characterised in conjunction with symptoms of posttraumatic stress disorder (Pasalich *et al.*, 2012). Therefore, secondary traits encompass individuals who cope through avoidance, emotional detachment, and the development of callousness (Pasalich *et al.*, 2012).

. Risk factors associated with psychopathic traits encompass the intersection of predisposing, precipitating, perpetuating, and predictive risks that include characteristics of the individual (i.e., neuropsychological deficits, autonomic irregularities, and temperamental traits) alongside with the characteristics of the individual's social context (i.e., peer rejection, family dysfunction, neighbourhood disorganisation, family socioeconomic status) (Frick & White, 2008). Nevertheless, further research is warrant to elucidate the mechanisms of individuals' interpersonal-relationships with their social contexts, substantively, individuals' filial relationships, in order to inhibit the reactive, evocative and proactive person-environment transactions that influence the prediction of psychopathic traits (Lynam *et al.*, 2009).

### 1.2. *Attachment theory and the importance of maternal and paternal attachment*

Bowlby's (1969) attachment theory constructs a framework which emphasises that "children come to internalise early interactions with, and expectations of, attachment figures and form mental representations – i.e., cognitive-affective schemas – of attachment relationships" (Pasalich *et al.*, 2012). In accordance with the theory, the nature of relationships which are formed in adulthood are significantly affected by the attachment styles formed with caregivers during childhood (Russell & King, 2016). In adult attachment, four prototypic attachment patterns have been defined to interpret positive or negative images of the individual's self-and others: secure attachment, anxious-preoccupied attachment, dismissive-avoidant attachment, and fearful-avoidant attachment (Bartholomew & Horowitz, 1991). Theoretically, the three prototypes of insecure attachment have been replicated as potential markers of individuals' vulnerability to delinquency, whereas secure attachment is conceptualised as a moderator to promote resilience (Conradi *et al.*, 2015; Frick & White, 2008).

A study by Brennan and Shaver (1998) revealed a strong link between insecure attachment and psychopathy. In insecure attachment, dismissive-avoidant patterns of attachment have a higher correlation with primary psychopathic features (MacKenzie & Crandall, 2003), i.e., individuals who are low in anxiety and emotionally steady (Glaser, 2013), while fearful-avoidant attachment patterns are linked to secondary features of psychopathy (MacKenzie & Crandall, 2003), i.e., individuals being highly anxious and emotionally unstable (Glaser, 2013). Moreover, empirical evidence revealed a significant correlation between insecure attachment in a father-daughter relationship, who are extremely controlling in nature, and adults exhibiting behaviours as substance dependence, which is a characteristic behaviour in secondary psychopathic traits (Blanchard & Lyons, 2016), i.e., individuals with secondary psychopathic traits who predominantly have problems in understanding others' emotions, are aggressive and hostile

(Glaser, 2013), but are also anxious, fearful and remorseful (Dean *et al.*, 2013). Additionally, individuals with insecure avoidant attachment relationships with mothers (both dismissive-avoidant and fearful-avoidant), and insecure anxious and avoidant attachment relationships with their fathers are more likely to exhibit features of primary psychopathic traits (Blanchard & Lyons, 2016), i.e., individuals engaging in antisocial behaviours due to their disordered idiopathic absence of empathy and fear (Dean *et al.*, 2013). Thus, it is evident that the reciprocal process between the parent and child can imply the predictive impact that delineates individuals' chances to positive or negative consequences (Dean *et al.*, 201; Frick & White, 2008; Waller *et al.*, 2013). However, it remains to determine the key constructs that define parent-adult relationships to interpret disorganised or disoriented so behaviours as indicators of collapsed behavioural strategies related to dissociative processes observed in parent-child interactions and family functioning across development. In turn, this understanding is warrant for planning effective parenting-focused interventions that can reduce levels of affectionless traits in youth.

The key quantifiable constructs of early child-parent relationships are identified through constructs of individuals' tendencies to care/affection, protect and control in relationships (Pasalich *et al.*, 2012). Previous studies of early child-parent relationships (i.e., Arrindell *et al.*, 1986; Bowlby, 1979; 1980; Murphy *et al.*, 1997; Parker, 1983; Peisah *et al.*, 1999; Schaefer, 1965) utilised measures that evaluated constructs of care/affection, protection and control through dimensions of *regard*, *responsibility* and *paternal control* in filial relationships. These three dimensions encompass filial gratitude or reciprocity and perceived closeness or compatibility (Pasalich *et al.*, 2012). Substantively, *regard* and *responsibility* are viewed as factors that can evaluate adult-child feelings of guilt and empathy, whereas *control* is viewed to evaluate parental power over the individual's life cycle (Pasalich *et al.*, 2012).

Attachment and behavioural research (i.e., Chinchilla & Kosson, 2016; Greenberg *et al.*, 1993; Pasalich *et al.*, 2012) contributed to explicating the complexity of parent-child relationships by suggesting that childhood and adolescence experiences of insecure parent-child relationships are considered risk factors to purvey features of primary and secondary psychopathic traits in their individual future parental characteristics (i.e., low parent education, psychiatric illness, substance and alcohol abuse, and criminality), family functioning (i.e., marital distress, single parenting, and family violence), and environmental provisions (i.e., low social economic status, poverty, crime, crowded living conditions, and divorce) (Del Gaizo & Falkenbach, 2008; Frick & White, 2008; Greenberg *et al.*, 1993). Hence, evidence for risks associated with primary and secondary psychopathic traits has been preliminary demonstrated in literature on child development, however, the implications of the adult-child and parent relationship for adult mental health has been relatively neglected in the psychopathology literature (Peisah *et al.*, 1999). In turn, there is no consensus on which key constructs of parental relationships validate the overlap between insecure maternal and paternal attachment and the prediction of psychopathic traits in adulthood (Chinchilla & Kosson, 2016).

Moreover, it is noteworthy to mention that gender differences in parent adult-child relationships are mainly speculative, anecdotal rather than empirical (Pasalich *et al.*, 2012), and focus extensively on mother-child relationships (i.e., Bisby *et al.*, 2017; Buck, 2015; Christian *et al.*, 2016), suggesting that children who are securely attached to the mothers are high in sensitivity, warmth and responsiveness (Brown *et al.*, 2012; Pasalich *et al.*, 2012). However, low paternal protection and an insecure pattern of attachment in father-child dyads may lead to children being emotionally detached in their future relationships (Gao, Raine, Chan, Venables, & Mednick, 2010). Unlike maternal attachment, not much has been investigated into the nature of father-child



relationships and their consequences (Brown *et al.*, 2012; Dwyer & Rubin, 2005). Mothers in modern society choose to step out of their houses and work in all academic and professional sectors; therefore, the influential role of fathers on the child's behaviour and development are considered equivalent in sharing the household responsibilities and tasks to that of mothers (Michiels *et al.*, 2010). Thus, as the child is both parents' responsibility, the role of paternal attachment is considered equally significant in the child's development (Jeong, McCoy, Yousafzai, Salhi, & Fink, 2016).

### 1.3. *Rationale and Hypotheses*

Dimensions of *regard*, *responsibility* and *paternal control* in parental relationships pervade child-parent relations throughout the life cycle, and correspond to tendencies of care/affection, protection and control in all relationships during adulthood (Peisah *et al.*, 1999). Hence, the current research suggests that psychopathic traits can be multi-dimensional, and therefore, the study examines how primary and secondary psychopathic traits are associated with maternal and paternal relationships and attachment styles.

The current research hypothesised that fearful and dismissive attachment styles would act as positive predictors for primary and secondary psychopathic traits, whereas secure maternal and paternal attachment would act as negative predictors for primary and secondary psychopathic traits. Furthermore, findings from previous research largely supports the notion that maternal responsiveness and secure maternal attachment reduces the psychopathic tendencies in children and adolescents (Buck, 2015; Gao *et al.*, 2010; Wright, Hill, Sharp, & Pickles, 2018). However, the effect of paternal attachment on primary and secondary psychopathic traits is not very well-researched. Based on the evidence which suggests that the nature of father-child relationships shares impact on the individuals development (Brown *et al.*, 2012; Jeong *et al.*, 2016; Yoder,

Brisson, & Lopez, 2016), and being mindful of the need for more robust research on paternal attachment and psychopathic traits, the current research hypothesised that individuals sharing fearful and dismissive insecure attachment relationships with controlling fathers would also show higher primary and secondary psychopathic traits in young adulthood.

## 2. Methods

### 2.1. Participants

The sample consisted of 211 participants ranging in age from 18 to 40 years ( $M_{\text{age}} = 25.55$  years old,  $SD = 5.47$  years), 146 of whom were females. The sample included participants from various racial and ethnic backgrounds; the majority of the sample was Caucasian ( $n = 130$ ), while other ethnicities included Indian ( $n = 35$ ), Middle Eastern ( $n = 19$ ), Asian ( $n = 18$ ), and Hispanic ( $n = 9$ ).

### 2.2. Measures

#### 2.2.1. Levenson Self-Report Psychopathy Scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995)

The LSRP is a 26-item self-report measure developed for use in non-institutionalised populations, and assesses psychopathic traits. The scale consists of two sub-scales: primary psychopathy, comprising 16 items ( $\alpha = .79$ ; i.e., “For me, what's right is whatever I can get away with”) which detects interpersonal and affective psychopathic traits, and secondary psychopathy, comprising 10 items ( $\alpha = .68$ ; i.e., “I quickly lose interest in tasks I start”), which detects impulsive/antisocial lifestyle psychopathic traits (Levenson *et al.*, 1995). Each item is rated on a 5-point Likert-scale ranging from 1 (*very true*) to 5 (*not true at all*) to calculate the total scores of primary and secondary psychopathic traits (Levenson *et al.*, 1995). The LSRP was designed for

use in psychological research, and is widely used (Christian & Sellbom, 2015; Levenson *et al.*, 1995; Hauck-Filho & Teixeira, 2013; Miller *et al.*, 2008).

### 2.2.2. *Parent Adult-Child Relationship Questionnaire (PACQ; Peisah et al., 1999).*

The PACQ was employed to assess maternal and paternal attachment (Peisah *et al.*, 1999). The PACQ is a 26-item self-report measure reflecting the adult-parent point of view on filial relationship. The PACQ is divided into two subscales assessing attachment relationships with the mother (PACQM), comprising 13 items which form two dimensions *regard* ( $\alpha=.88$ , i.e., “I respect my mother’s opinion”) and *responsibility* ( $\alpha=.83$ , i.e., “I feel that I should take care of my mother because she has suffered so much in her life”). For the paternal relationships (PACQF), comprising the other 13 items, has three dimensions two which are conceptually similar to those derived for the mother *regard* ( $\alpha=.85$ ) and *responsibility* ( $\alpha=.65$ ) plus an additional dimension *control* ( $\alpha=.85$ , i.e., “I don’t discuss much with my father because I’m afraid of being criticized”) (Peisah *et al.*, 1999). Each item was rated on a 4-point Likert-scale ranging from 0 (*not true at all*) to 3 (*very true*). The PACQ has good validity and reliability (Peisah *et al.*, 2004)

### 2.2.3. *Relationships Scale Questionnaire (RSQ; Griffin & Bartholomew, 1994).*

The RSQ is a 30-item self-report measure that accesses the interpersonal relationships of individuals from an attachment perspective (Pehrabad *et al.*, 2016). The items of the questionnaire corresponds to measures of adult attachment to explore close relationships with friends and family, as well as romantic relationships. The RSQ is an indirect measure of the Bartholomew and Horowitz’s (1991) four category attachment styles. RSQ scores for the four attachments styles can be derived by computing the mean of the items for each subscale. Four of the items contribute to the score for the *Preoccupied* ( $\alpha=.55$ ) and the *Fearful* ( $\alpha=.78$ ) scales and five of the items to the

scores for the *Secure* ( $\alpha=.45$ ) and the *Dismissive* ( $\alpha=.68$ ) scales. One of the items of the *Dismissive scale* is included in reversed form in the preoccupied scale. The thirteen remaining items were not used in the scale. Each item is rated on a 5-point Likert-scale ranging from 1 (*not at all like me*) to 5 (*very much like me*) (Griffin & Bartholomew, 1994). The RSQ has good validity and reliability (Fontanil Gómez *et al.*, 2013; Guédeney *et al.*, 2010; Macinnes *et al.*, 2016; Pehrabad *et al.*, 2016).

### 2.3. Procedure

The battery of questionnaires was administered via the Bristol Online Surveys (BOS) a secure online platform. The link to the survey was distributed into various forums and means of social media, which allowed participants free access to the survey from their personal devices. Participation was voluntary, there was no incentive offered. All participants gave informed consent. The subsequent session of the survey firstly comprised a general demographic questions, (age, gender, ethnicity), followed by three questionnaires assessing psychopathic traits and attachment. The online questionnaires took approximately 20-25 minutes to complete. After completing the questionnaires, participants were thanked for their participation. The study had approval from the Ethics Committee of the University of Edinburgh.

## 3. Results

Preliminary analysis tested the data to check assumptions. Using Curran, West, and Finch's (1996) guidelines for deciding what levels of skewness or kurtosis represent a departure from normality (skewness  $\geq 2.0$  and/or kurtosis  $\geq 7.0$ ), data appeared to be normally distributed in that all skewness and kurtosis values (see Table 1) for men were less than 1.24 and 1.29, respectively. For women, the skewness and kurtosis values were less than 1.57 and 2.59, respectively. Tests to see if the data met the assumption of collinearity indicated that neither bivariate collinearity nor

multicollinearity was a concern ( $r < .7$ ; tolerance  $> .1$ ; VIF  $< 10$ ). To determine how to best present the data, two independent-samples t-test were conducted to test for potential gender differences on primary and secondary psychopathic traits. No gender effect was found for primary or secondary psychopathic traits ( $ps > .05$ ) so descriptive data are collapsed together (Table 1).

The association between attachment relationships, primary and secondary psychopathic traits, were evaluated first (Table 2). Following Cohen's (1988) suggestions of interpreting a correlation of .1 as small, .3 as moderate, and .5 as large, relationships with convergent scales ranged from small to moderate. Findings show a similar pattern of associations with study variables for primary and secondary psychopathic traits. A significant positive correlation was found for the dismissive and fearful attachments and both primary and secondary psychopathic traits, indicating that while participants scores in these attachments styles increased so did their psychopathic traits scores. Significant negative correlations on the other hand were found for secure and preoccupied attachments and both primary and secondary psychopathic traits, indicating that as the participant's scores on these attachments increased, their scores on psychopathic traits decreased. Primary and secondary psychopathic traits were also found to be positively correlated with the responsibility factor describing participants' relationships with both their mothers and fathers. This indicates that if participants' scores on the responsibility scores increased describing father or mother relationships, so did their psychopathic traits. A positive significant correlation was also found between the control factor characterizing paternal relationship and both primary and secondary psychopathic traits. However there is no significant relationship between primary or secondary psychopathic traits and the factor of regard, describing the relationship with mothers or fathers.

Multiple regression analyses were conducted next to determine the degree to which attachment prototype and factors describing the relationship with the mother and father uniquely added to the prediction of primary and secondary psychopathic traits separately. As seen in Table 3, paternal responsibility and paternal control assessed by the PACQ and dismissive, fearful and secure attachment assessed by the RSQ explained 38% of the variance of primary psychopathic traits. Findings indicate that the factors describing the relationship with fathers such as responsivity and control were positive predictors for primary psychopathic traits. Surprisingly factors describing the relationship with mothers (regard or responsibility) did not yield any significant predictors for primary psychopathic traits. When looking at the attachment prototypes, the dismissive and fearful attachment were positive predictors for primary psychopathic traits whereas secure attachment was a negative predictor. However, the preoccupied prototype was not a significant predictor for primary psychopathic traits.

A similar pattern of results was found for secondary psychopathic traits. Results from the multiple regression analyses indicate that factors describing the relationship with fathers such as responsibility and control were positive predictors for secondary psychopathic traits, while no factors describing the relationship with mothers were found to be significant predictors for secondary psychopathic traits. Additionally participants with dismissive and fearful attachments reported higher secondary psychopathic traits, whereas participants with secure attachment reported lower secondary psychopathic traits. The preoccupied attachment was not a significant predictor for secondary psychopathic traits.

#### **4. Discussion**

The aim of the current study was to elucidate the associations between constructs of parental relationships through secure and dismissive and fearful attachment styles and primary and

secondary psychopathic traits in a non-clinical sample of young adults. Findings of the current study are mostly in agreement with the primary hypothesis dismissive and fearful attachment styles in parental relationships revealed a positive correlation with primary and secondary psychopathic traits in young adults, whereas a preoccupied and secure attachment styles were negatively correlated with both primary and secondary psychopathic traits. Additionally a positive correlation was also found for both the primary and secondary psychopathic traits and the factor of responsibility for both parents and control for fathers. Results of the current study were consistent with studies showing that there are strong links between dismissive and fearful attachment styles and psychopathic traits in childhood (Brennan & Shaver, 1998; Carter *et al.*, 2014; Gao *et al.*, 2010; MacKenzie & Crandall, 2003; Phillips & Frick, 2003).

Although the variables characterizing the relationship with mothers (regard and responsibility) did not contribute to the prediction of primary or secondary psychopathic traits, variables characterizing the father-child dyad (responsivity and control) revealed a significant contribution to the presence of both primary and secondary psychopathic traits. Substantively, the present finding was consistent with previous research which explicated that relationships with fathers characterised by being protective and controlling purvey traumatic and threatening early life experiences (Out, Bakermans-Kranenburg & Van Ijzendoorn, 2009). Lack of resolution of the trauma may sequentially cause insensitive parental behaviours which promote a coercive process that occurs bi-directionally to prevent the child's ability from developing an organised attachment strategy (Out *et al.*, 2009). Thus, there are increased risks of developing characteristics such as lack of response to parenting skills, lack of empathy, lack of remorse and guilt, along with impoverished, shallow and altered emotional expressions. These characteristics are implicated in

increased subjective distress, and increased focus on negative affect, conceptualising features directly related to primary and secondary psychopathic traits.

The hypotheses of the current study were developed from the abundance of existing literature that support the relationship between attachment theory, early life events, and psychopathic traits. Previous studies of child-parent relationships (i.e., Arrindell *et al.*, 1986; Bowlby, 1979; 1980; Murphy *et al.*, 1997; Parker, 1983; Schaefer, 1965) suggested that the quality of maternal and paternal attachment relationships, as identified in the PACQ scale, pervade and influence parent adult-child relationships throughout the life cycle (Peisah *et al.*, 1999). Peisah *et al.*, (1999) demonstrated that the PACQ measure primarily depends on past aspects of the relationship, the parents' wellbeing, gender of the parent, as well as other confounding factors to construct an efficient estimation of the nature of the filial relationships during the assessment phase (Peisah *et al.*, 1999). Additionally, as previously informed by Peisah *et al.*, (1999), the theoretical construction of both the PACQM and PACQF correspond closely to similar concepts of attachment characterised in constructs of care/affection, protection and control. Thus, indicating indices of fear recognition, dysfunction of empathy processing, and emotional neglect. Findings of the current research achieved to assess problem areas of parent adult-child relationships verifying the reliability and validity of the psychometric properties through high correlations between item scores and high internal consistency in the PACQM ( $\alpha = .80$ ), and in the PACQF ( $\alpha = .80$ ).

Present findings however were not consistent with previous research which indicated the significant negative association between maternal warmth, secure maternal attachment and psychopathic traits (i.e., Bisby *et al.*, 2017; Buck, 2015; Christian *et al.*, 2016). In contrast, the current study indicated that insecure maternal styles and relationships with mothers had no significant contribution to the prediction of primary and secondary psychopathic traits. One



possible justification for the findings may lay in the “double-barrelled” nature of some items particularly in the PACQM (i.e., “*I feel that I should take care of my mother because she has suffered so much in her life*”). This construction could introduce ambiguity and difficulty with the principal component approach towards the questionnaire design (Peisah *et al.*, 1999). Another justification can be interpreted, with respect to paternal attachment relationships, as the influential paternal role (Michiels *et al.*, 2010). The negative influences of insecure paternal relationships would carry out with stronger effects into youth, than those of insecure maternal attachments; the nature of whose insecurity is decided into an individual’s childhood itself.

Moving forward, building on the initial work applying an attachment perspective to adults (i.e., Hazan & Shaver, 1987; Main *et al.*, 1985) the RSQ measure aimed to underlie the negativity and positivity of two fundamental dimensions described by Bowlby as *the models of self and others* (Griffin & Bartholomew, 1994). Previous research has demonstrated that each attachment pattern was associated with a unique profile of interpersonal problems (i.e., Bartholomew & Horowitz, 1991). That is, individuals with secure attachment relationships function qualitatively differently than dismissive and fearful attached individuals. Furthermore, the present study aimed to extend this body of research by exploring means towards resilience through prevention and intervention efforts to inhibitory control the prediction of psychopathic traits in the sample of young adults. Hence, underlying the developmental patterns in attachment needs, given the sample age of the current study, findings of the current study were compatible with previous research (i.e., Brennan & Shaver, 1998; Glaser, 2013; MacKenzie & Crandall, 2003) indicating that dismissive and fearful relationships demonstrated to be stronger risk factors than preoccupied relationships, which predict both primary and secondary psychopathic traits, whereas secure relationships demonstrated to be a protective factor inhibiting both primary and secondary psychopathic traits.

#### *4.1.Limitations and Future Directions*

Findings of the current study should be interpreted with caution in light of several limitations. Firstly, the current study was conducted in a non-clinical sample with a discrepancy in the ratio of females to males, the results, thus incurred could not be generalised from a gender-specific perspective and the study should be replicated in an increased sample size of clinical and non-clinical populations. Secondly, as the current study was performed through a quantitative approach, the scope of this study was limited to self-reports some of which had low internal consistency for some scale dimensions (e.g., secondary psychopathic traits, paternal responsibility, preoccupied, secure, and fearful scales). The use of alternate methods such as semi-structured interviews and unbiased behavioural tasks, along with other self-reports will provide a deeper and a more objective perspective on the participants' psychopathic tendencies in future studies (Miller *et al.*, 2008). Inclusion of parent-reported and peer-reported measures would also add a new perspective to the responses and give us a better understanding of the nature of participants' relationships.

Thirdly, given the cross-sectional design of the study, causal relationships among study variables cannot be unequivocally determined. More longitudinal studies would also help in gaining a better perspective. Lastly, other external variables might have affected the study and biased the results were not considered during the analysis. Factors like belonging to a separated family or having single parents affect the attachment styles of children to a great extent, in turn affecting their overall development (Brennan & Shaver, 1998).

Overall, the current research examined the relationship between attachment styles, parental relationships and primary and secondary psychopathic traits in young adults. Fearful and dismissive attachment styles showed to be stronger predictors of both primary and secondary

psychopathic traits in young adults (more so for secondary) indicating that environmental correlates can act as risk factors on the prediction of psychopathic traits and more so for the secondary traits. The results lay a foundation for future studies to assess the association between the current variables over time for more informative results. Measures of attachment relationships used in the present research provided an insight on identifying a range of mechanisms that can reduce the likelihood of psychopathic trait expression in adulthood. Thus, such findings can increase awareness of the significant role of adult-child and parent relationship for adult mental health and well-being, and shed light on the implications of paternal positive effect in particular. Findings of the current study also emphasise that more effective planning for father-child attachment-informed interventions can act as a protective environmental factor to increase levels of empathy and emotional reaction responses, and therefore help reduce long-term effects of psychopathy. Finally, the findings lay a foundation for future studies to assess the association between the current variables in an increased sample size for more informative results.

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Table 1. Means (*M*) and standard deviations (*SD*), Skewness and Kurtosis for PACQ, RSQ and LSRP.

	<i>M (SD)</i>	<i>Skewness</i>	<i>Kurtosis</i>
Levenson Selfreport Psychopathy Scale (LSRP)			
Primary Psychopathic Traits	28.55 (7.49)	1.50	2.22
Secondary Psychopathic Traits	29.33 (5.69)	.91	.90
Parent Adult-Child Relationship Questionnaire (PACQ)			
Mother - Regard	1.86 (.93)	-.52	-.98
Mother - Responsibility	.95 (.71)	.64	-.32
Father - Regard	1.86 (.17)	-.60	-.70
Father - Responsibility	.66 (.67)	1.13	.90
Father - Control	.60 (.79)	1.38	.98
Relationships Scale Questionnaire (RSQ)			
Secure Attachment	2.87 (.74)	-.02	-.20
Dismissive Attachment	3.41 (.76)	-.30	-.25
Fearful Attachment	3.08 (1.01)	-.11	-.85
Preoccupied Attachment	3.18 (.70)	-.15	-.35

Table 2. *Correlations between Primary and Secondary Psychopathic Traits scores (LSRP) among the main study variables.*

	LSRP	LSRP
	Primary	Secondary
Parent Adult-Child Relationship Questionnaire (PACQ)		
Mother - Regard	.12	.01
Mother - Responsibility	.44**	.37**
Father - Regard	.06	-.01
Father - Responsibility	.46**	.42**
Father - Control	.34**	.36**
Relationship Scale Questionnaire (RSQ)		
Secure Attachment	-.16*	-.27**
Dismissive Attachment	.27**	.26**
Fearful Attachment	.35**	.43**
Preoccupied Attachment	-.27**	-.35**

Note. LSRP = Levenson Selfreport Psychopathy Scale

\* $p < .05$ ; \*\*  $p < 0.01$

Table 3. *Regression analysis for maternal and parental relationships and attachment styles predicting primary psychopathic traits.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$
Parent Adult-Child Relationship Questionnaire (PACQ)			
Mother - Regard	-.08	.55	-.01
Mother - Responsibility	1.49	.79	.14
Father - Regard	.13	.64	.02
Father - Responsibility	3.19	.89	.29**
Father - Control	1.81	.63	.19**
Relationship Scale Questionnaire (RSQ)			
Secure Attachment	-1.50	.75	-.15*
Dismissive Attachment	1.65	.74	.17*
Fearful Attachment	1.12	.53	.15*
Preoccupied Attachment	.08	.77	.01

Note.  $R^2 = .38$ ,  $F(9,210) = 13.62$ ,  $p < .01$

\* $p < .05$ ; \*\* $p < .01$

Table 4. *Regression analysis for maternal and parental relationships and attachment styles predicting secondary psychopathic traits.*

Variable	<i>B</i>	<i>SE B</i>	$\beta$
Parent Adult-Child Relationship Questionnaire (PACQ)			
Mother - Regard	-.52	.40	-.09
Mother - Responsibility	.56	.57	.07
Father - Regard	-.18	.46	-.03
Father - Responsibility	2.41	.65	.29**
Father - Control	1.26	.46	.17**
Relationship Scale Questionnaire (RSQ)			
Secure Attachment	-2.31	.54	-.30**
Dismissive Attachment	1.45	.54	.19**
Fearful Attachment	1.24	.38	.22**
Preoccupied Attachment	.02	.56	.01

Note.  $R^2 = .43$ ,  $F(9,210) = 17.08$ ,  $p < .01$

\*\* $p < .01$